

Appln No. 09/406,844
Amdt dated November 28, 2003
Reply to Office Action of August 27, 2003

Docket No. CIT/K-0091

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) In a method for performing data communication between a mobile station and a network which have media access control sublayers, respectively, a method for branching data in a mobile communication terminal, comprising the steps of:
- a) allowing each of said media access control sublayers of said mobile station and network to attach logical channel types based on traffic characteristic information and a radio bearer status to a media access control header contained in data to be sent, in a data sending mode;
- b) allowing each of said media access control sublayers to branch said data to be sent, to transport channels corresponding to the attached logical channel types;
- c) allowing each of said media access control sublayers to determine logical channels corresponding to logical channel types of a media access control header contained in received data in a data receiving mode; and
- d) allowing each of said media access control sublayers to branch said received data to said determined logical channels.

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2. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein each of said steps b) and d) includes the step of allowing each of said media access control sublayers to perform a channel mapping operation in a one-to-one manner, a channel multiplexing operation in a many-to-one manner and a channel demultiplexing operation in a one-to-many manner to branch said data to be sent or said received data.

3. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein said traffic characteristic information includes traffic characteristic identifiers transferred from a radio resource control layer and other upper layers.

4. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 3, wherein each of said traffic characteristic identifiers represents any one of random access data, synchronization data, system information, paging information, forward access grant information, short message service data, no radio bearer-type short packet data, signaling data, radio bearer-type short/long packet data, multicast signaling data, multicast data and speech characteristics.

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5. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said mobile station is adapted to, if said data to be sent is random access data, attach a type of a common control channel to said media access control header contained in said data to be sent and map said common control channel to a random access channel in a one-to-one manner, said common control channel and random access channel being logical and transport channels for said random access data, respectively.

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6. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data receiving mode, said media access control sublayer of said mobile station is adapted to, if said logical channel types of said media access control header contained in said received data correspond respectively to a synchronization control channel, a broadcast control channel and a paging control channel, map a synchronization channel, a broadcast channel and a paging channel respectively to said synchronization control channel, broadcast control channel and paging control channel in a one-to-one manner to branch said received data to said synchronization control channel, broadcast control channel and paging control channel, said synchronization control channel and synchronization channel being logical and transport channels for synchronization data, respectively, said broadcast control channel and broadcast channel being logical and

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transport channels for system information, respectively, said paging control channel and paging channel being logical and transport channels for paging information, respectively.

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7. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said mobile station is adapted to, if said traffic characteristic information includes synchronization data, system information, paging information and forward access grant information characteristics, attach types of a synchronization control channel, broadcast control channel, paging control channel and common control channel to said media access control header contained in said data to be sent and map said synchronization control channel, broadcast control channel, paging control channel and common control channel respectively to associated transport channels in a one-to-one manner to branch said data to be sent, to the associated transport channels, said synchronization control channel, broadcast control channel, paging control channel and common control channel being logical channels for said synchronization data, system information, paging information and forward access grant information characteristics, respectively.

8. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said mobile station is adapted to, if said traffic characteristic information includes random

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access data, short message data and no radio bearer-type short packet data characteristics, attach types of a common control channel, dedicated control channel and dedicated traffic channel to said media access control header contained in said data to be sent and multiplex said common control channel, dedicated control channel and dedicated traffic channel to a random access channel in a many-to-one manner to branch said data to be sent, to the random access channel, said common control channel, dedicated control channel and dedicated traffic channel being logical channels for said random access data, short message data and no radio bearer-type short packet data characteristics, respectively, said random access channel being a transport channel.

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9. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said mobile station is adapted to, if said traffic characteristic information includes signaling data and radio bearer-type short/long packet data characteristics, attach types of a dedicated control channel and dedicated traffic channel to said media access control header contained in said data to be sent and multiplex said dedicated control channel and dedicated traffic channel to a dedicated channel in a many-to-one manner to branch said data to be sent, to the dedicated channel, said dedicated control channel and dedicated traffic channel being logical channels for said signaling data and radio bearer-type short/long packet data characteristics, respectively, said dedicated channel being a transport channel.

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10. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said network is adapted to, if said traffic characteristic information includes forward access grant information, short message data and no radio bearer-type short packet data characteristics, attach types of a common control channel, dedicated control channel and dedicated traffic channel to said media access control header contained in said data to be sent and multiplex said common control channel, dedicated control channel and dedicated traffic channel to a forward access channel in a many-to-one manner to branch said data to be sent, to the forward access channel, said common control channel, dedicated control channel and dedicated traffic channel being logical channels for said forward access grant information, short message data and no radio bearer-type short packet data characteristics, respectively, said forward access channel being a transport channel.

11. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said network is adapted to, if said traffic characteristic information includes multicast signaling data and multicast data characteristics, attach types of a dedicated control channel and dedicated traffic channel to said media access control header contained in said data to be sent and multiplex said dedicated control channel and dedicated traffic channel to a downlink

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shared channel in a many-to-one manner to branch said data to be sent, to the downlink shared channel, said dedicated control channel and dedicated traffic channel being logical channels for said multicast signaling data and multicast data characteristics, respectively, said downlink shared channel being a transport channel.

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12. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 1, wherein, in said data sending mode, said media access control sublayer of said network is adapted to, if said traffic characteristic information includes signaling data and radio bearer-type short/long packet data characteristics, attach types of a dedicated control channel and dedicated traffic channel to said media access control header contained in said data to be sent and multiplex said dedicated control channel and dedicated traffic channel to a dedicated channel in a many-to-one manner to branch said data to be sent, to the dedicated channel, said dedicated control channel and dedicated traffic channel being logical channels for said signaling data and radio bearer-type short/long packet data characteristics, respectively, said dedicated channel being a transport channel.

13. (Original) In a method for performing data communication between a mobile station and a network which have media access control sublayers, respectively, a method for branching data in a mobile communication terminal, comprising the steps of:

- a) allowing each of said media access control sublayers of said mobile station and

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network to set information regarding connection between logical channels and transport channels on the basis of traffic characteristic information and a radio bearer status;

b) allowing each of said media access control sublayers to attach logical channel types based on the set connection information to a media access control header contained in data to be sent, in a data sending mode; and

c) allowing each of said media access control sublayers to branch said data to be sent, to transport channels corresponding to the attached logical channel types.

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14. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 13, further comprising the steps of:

d) allowing each of said media access control sublayers to determine logical channels corresponding to logical channel types of a media access control header contained in received data in a data receiving mode; and

e) allowing each of said media access control sublayers to branch said received data to said determined logical channels.

15. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 14, wherein each of said steps c) and e) includes the step of allowing each of said media access control sublayers to perform a channel mapping operation in a one-to-one manner, a channel multiplexing operation in a many-to-one manner and a channel

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demultiplexing operation in a one-to-many manner to branch said data to be sent or said received data.

16. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 13, wherein said traffic characteristic information includes traffic characteristic identifiers transferred from a radio resource control layer and other upper layers.

17. (Original) A method for branching data in a mobile communication terminal, as set forth in Claim 16, wherein each of said traffic characteristic identifiers represents any one of random access data, synchronization data, system information, paging information, forward access grant information, short message service data, no radio bearer-type short packet data, multicast signaling data, multicast data and speech characteristics.

18. (Previously Presented) A method comprising mapping between logical channels and transport channels, wherein:

the logical channels comprise at least one of:

- a dedicated control channel; and
- a dedicated traffic channel, and

the transport channels comprise at least one of:

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- a forward access channel;
- a random access channel;
- a downlink shared channel; and
- a dedicated channel.

19. (Previously Presented) The method of claim 18, wherein said mapping is a function of medium access control.

20. (Previously Presented) The method of claim 19, wherein said medium access control is MAC.

21. (Previously Presented) The method of claim 18, wherein the medium access control is a sublayer that performs a branching operation suitable to a service characteristic in order to appropriately process a variety of services.

22. (Previously Presented) The method of claim 18, wherein the said mapping is between the dedicated control channel and one of the transport channels.

23. (Previously Presented) The method of claim 22, wherein said dedicated control channel is DCCH.

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24. (Previously Presented) The method of claim 23, wherein the DCCH is for transferring dedicated signal control information in duplex through a downlink and uplink.

25. (Previously Presented) The method of claim 18, wherein the said mapping is between the dedicated traffic channel and one of the transport channels.

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26. (Currently Amended) The method of claim 25, wherein said dedicated ~~control~~
traffic channel is DTCH.

27. (Previously Presented) The method of claim 26, wherein the DTCH is for transferring dedicated user long/short packet data in duplex through a downlink and uplink.

28. (Previously Presented) The method of claim 18, wherein the said mapping is between one of the logic channels and the forward access channel.

29. (Previously Presented) The method of claim 28, wherein said forward access channel is FACH.

30. (Previously Presented) The method of claim 29, wherein the FACH is for

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transferring forward access grant information and short packet data in simplex through a downlink.

31. (Previously Presented) The method of claim 18, wherein the said mapping is between one of the logic channels and the random access channel.

32. (Previously Presented) The method of claim 31, wherein said random access channel is RACH.

33. (Previously Presented) The method of claim 32, wherein the RACH is for transferring random access data and short packet data in simplex through an uplink.

34. (Previously Presented) The method of claim 18, wherein the said mapping is between one of the logic channels and the downlink shared channel.

35. (Previously Presented) The method of claim 34, wherein said downlink shared channel is DSCH.

36. (Previously Presented) The method of claim 35, wherein the DSCH is for multicasting user data in simplex through a downlink.

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37. (Previously Presented) The method of claim 18, wherein the said mapping is between one of the logic channels and the dedicated channel.

38. (Previously Presented) The method of claim 37, wherein said dedicated channel is DCH.

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39. (Previously Presented) The method of claim 38, wherein the DCH is for transferring dedicated signal information and dedicated user data in duplex through a downlink and uplink.

40. (Previously Presented) An apparatus configured to implement the method of claim 18.

41. (Previously Presented) The apparatus of claim 40, wherein the apparatus is user equipment.

42. (Previously Presented) The apparatus of claim 41, wherein user equipment is a mobile station.

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43. (Previously Presented) The apparatus of claim 40, wherein the apparatus is a network.

44. (Previously Presented) The apparatus of claim 40, wherein the apparatus is a sending entity.